

Applicant:	Hicks
Appl. No.	10/686747
Examiner:	To be assigned
Docket No.	705397.4008

### **Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Original) A method for automatic geometric alignment in a CRT projection system comprising the steps of  
  
displaying a first image pattern onto a screen of the CRT projection system,  
  
wherein the screen includes a Fresnel lens,  
  
reflecting back a portion of the light from the first image off of the Fresnel lens,  
  
identifying the boundaries of the screen,  
  
calculating optimum locations based on screen boundary coordinates,  
  
displaying a second image pattern,  
  
moving the second pattern to a first optimum location,  
  
reporting the actual location of the second image pattern,  
  
comparing the actual location of the second image pattern with the coordinates of the first optimum location, and  
  
aligning the second image pattern with the first optimum location.
2. (Original) The method of claim 1 wherein the first image pattern comprises a flat green field projected onto the screen and onto an over scanned area.
3. (Original) The method of claim 2 wherein the step of identifying the

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boundaries of the screen includes analyzing the difference in brightness of the reflected images reflected off of the screen and the over scanned area.

4. (Cancelled)

5. (Original) The method of claim 1 wherein aligning the second image pattern with the first calculated optimum location includes adjusting the size or centering of the second image pattern.

6. (Original) The method of claim 1 further comprising the steps of  
moving the second pattern to a second optimum location,  
reporting the actual location of the second image pattern,  
comparing the actual location of the second image pattern with the coordinates of the second optimum location, and  
adjusting the position of the second image pattern to align the second image pattern with the first calculated optimum location.

7. (Original) The method of claim 1 wherein the step of calculating optimum locations based on screen boundary coordinates includes calculating n optimum locations and further comprising the steps of  
moving the second pattern to n optimum locations,  
reporting the actual location of the second image pattern at each of the n

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optimum locations,

comparing the actual location of the second image pattern at each of the n optimum locations with the coordinates of each of the n optimum locations, and

aligning the second image pattern at each of the n optimum locations with the each of the n optimum locations.

8. (Original) A method for automatic convergence alignment in a CRT projection system comprising the steps of

displaying a first image pattern a first location on a screen comprising a Fresnel lens,

reflecting back a portion of the light from the first image off of the Fresnel lens,

identifying and storing the coordinates of the first location of the first image pattern,

moving the first image pattern to a second location,

identifying and storing the coordinates of the second location of the first image pattern,

displaying a second image pattern,

adjusting the second image pattern to move the second image patten to the top center of the first location of the first image pattern,

reporting the actual location of the second image pattern,

comparing the actual location of the second image pattern with the coordinates of the first location of the first image pattern, and

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aligning the second image pattern with the first location of the first image pattern.

9. (Cancelled)

10. (Original) The method of claim 8 further comprising steps of  
moving the second image pattern to a second location,  
adjusting the second image pattern to move the second image pattern to the top  
center of the second location of the first image pattern,  
reporting the actual location of the second image pattern,  
comparing the actual location of the second image pattern with the coordinates  
of the second location of the first image pattern, and  
aligning the second image pattern with the second location of the first image  
pattern.

11. (Original) The method of claim 10 further comprising the steps of  
displaying a third image pattern,  
adjusting the third image pattern to move the third image pattern to the top  
center of the first location of the first image pattern,  
reporting the actual location of the third image pattern,  
comparing the actual location of the third image pattern with the coordinates of  
the first location of the first image pattern, and  
aligning the third image pattern with the first location of the first image pattern.

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12. (Original) The method of claim 11 further comprising steps of  
moving the third image pattern to a second location,  
adjusting the third image pattern to move the third image pattern to the top  
center of the second location of the first image pattern,  
reporting the actual location of the third image pattern,  
comparing the actual location of the third image pattern with the coordinates of  
the second location of the first image pattern, and  
aligning the third image pattern with the second location of the first image  
pattern.

13. (Original) The method of claim 12 wherein the first, second and third  
image patterns comprise a movable monochromatic geometric shape.

14. (Original) The method of claim 8 wherein the screen includes a Fresnel  
lens.

15. (Original) The method of claim 10 further comprising the steps of  
moving the first image pattern to  $n$  locations,  
identifying and storing the coordinates of the first image pattern at each of the  $n$   
locations,  
moving the second image pattern to each of the  $n$  locations,

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adjusting the second image pattern to move the second image pattern to the top center of each of the n locations of the first image pattern,

reporting the actual location of the second image pattern at each of the n locations,

comparing the actual location of the second image pattern at each of the n locations with the coordinates of the first image pattern at each of the n locations, and

aligning the second image pattern at each of the n locations with each of the n locations of the first image pattern.

16. (Cancelled)

17. (Cancelled)

18. (Cancelled)

19. (Original) A CRT projection system comprising  
a projection screen,  
a plurality of CRTs optically coupled to the projection screen,  
a recordable medium comprising a software program convergence and  
geometric alignment of the projection system, and  
a CCD camera optically coupled to the entire internally facing side of the  
projection screen and operably coupled to the recordable medium.

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20. (Original) The projection system of claim 19 wherein the projection screen comprises a Fresnel lens, wherein the CCD camera is optically coupled to the entire internally facing side of the lens.

21. (Original) The projection system of claim 19 further comprising a roll-up reflective screen removably interposing the CCD camera and the screen wherein the CCD camera is optically coupled to the entire internally facing side of the screen.

22. (Cancelled)

23. (Original) The projection system of claim 19 further comprising on screen display hardware operably coupled to the recordable medium and the plurality of CRTs.